

NEW ALOES FROM NATAL AND ZULULAND,
WITH NOTES ON *A. MACRACANTHA* BAK.

(With Plates I—V.)

By G. W. REYNOLDS.

Before describing new *Aloes*, it is necessary to discuss the identity of *Aloe macracantha* Bak. This is a puzzling species, the identity and locality of which seem to be unknown in South Africa to-day.

In the first publication,¹ Baker founded the species only on leaf characters and a stem of 2—3 feet, "*flores ignoti*"; there are no figures, the locality given being, "C.B. Spei, Cooper, introduced about 1870."

In the second publication,² we learn that *A. macracantha* is "native of the Cape Colony," and that it was "discovered by Mr. Thomas Cooper of Reigate in his travels through the eastern provinces of the Cape Colony from 1858 to 1862." The species is described *inter alia* with peduncle simple or forked about a foot long, inflorescence a dense corymb about 4 ins. in diameter, pedicels an inch or an inch and a half long (25—38 mm.), perianth nearly two inches long (say about 45 mm. long), segments half as long as the tube, which means segments free for one third their length. A leaf, raceme, and flowering plant are figured. The leaf has nothing distinctive about it, and could fit many species in the section *Saponariae*; the raceme is capitate, rather round topped, about as broad as long, while in it a flower measures 44 mm., a pedicel 30 mm. Regarding the plant figured, the stem and rosette are more suggestive of a young *A. arborescens* Mill. than anything in the section *Saponariae*, while the inflorescence bears only two racemes. No doubt the long slender stem and attenuate decurved leaves are the result of growing the plant overseas in a greenhouse, under protected conditions very different from the blazing sun of its natural South African habitat.

In the third publication³ Baker adds little, but he distinctly gives "tube shorter than the segments" which means that the segments would be free to beyond the middle. He records "S. Africa without locality, introduced by Cooper about 1860." It seems that the date 1870 in the first publication is a mistake, since most of Cooper's introductions were effected about 1860.

¹ *Vide* Journ. Linn. Soc. XVIII 1870, p. 167.

² *Vide* Curtis Bot. Mag. vol. XXXVII of the 3rd series, 1881, t. 6580.

³ *Vide* Flora Capensis VI 1896, p. 314.

Berger, in the fourth publication⁴ gives the stem as shortly caulescent, and pedicels 35—50 mm. In addition to "S. Africa locality unknown, Cooper 1860," evidently taken over from Baker, he gives "Bei Ripplemead, Kabousie in Kaffraria (Schonland-Bluhend April—July; Kult. Exemplare!)" The writer has consulted this material in Albany Museum Herb., and from the grouping of the 50 mm. long pedicels, the 45 mm. flowers, and the shape of the raceme, he is convinced that it should be referred to *A. saponaria*, which in its various forms, occurs from the Cape more or less along the Coastal belt through the Eastern Province and Transkei into Natal. By describing the stem as "*breviter caulescens*" and by giving the pedicel length as reaching 50 mm., it seems that Berger was influenced by Schonland's material of *A. saponaria* and confused it with *A. macracantha*, while in his account he has taken over some characters from Baker, and also included some from the Ripplemead plant. It therefore appears we must discard Berger's account, and rely on Baker for the identifying characters of the species. What then is *A. macracantha*, and where could Cooper have collected it? From Baker's accounts the species is characterised chiefly by a low sparingly branched inflorescence, capitate racemes with pedicels up to 38 mm., flowers about 45 mm., with the outer segments free to about the middle. As regards the possible locality, does Baker's reference to "the eastern provinces of Cape Colony" include Natal? There is ample evidence that Cooper collected in Natal and Zululand since Baker described *A. Cooperi* from grassy plains of Natal, and *A. sigmoidea* (without flowers) from "Amatonga country," which, if the same as is known as Amatongaland to-day, is the country east of the Lebombo mountains in north-eastern Zululand. It therefore seems that *A. macracantha* could have originated anywhere from the Eastern Province to Zululand.

If it came from the Eastern Province, Transkei, or the southern parts of Natal, it is most likely a form of *A. saponaria* with racemes slightly round topped and pedicels a little shorter than the 45 mm. flowers. This does not seem an impossibility, when the fig. of a raceme in *Bot. Mag.* is studied, and when allowance is made for cultivation overseas. It must be remembered that *A. saponaria* is a variable species characterised by racemes corymbose, pedicels 40—60 mm. and flowers 40—50 mm. long. Sometimes the pedicels are shorter than the flowers, but usually they exceed the length of the perianth.

If *A. macracantha* came from the north-eastern part of Natal, or from Zululand, then there are 3 other capitate species to be considered.

⁴ Engler, *Das Pflanzenreich*, Liliac-Asphod-Alcin, 1908, p. 199.

(a) The only locality known to the writer where maculates are found in Natal and Zululand with stems reaching 2—3 feet (erect or decumbent), is in the neighbourhood of Mudén, in the valley of the Mooi River near Keats Drift, and between Mpofana and Tugela Ferry. This species (which is hereinafter described as *A. mudenensis*) has been thought to be *A. macracantha*, but in the writer's opinion, it differs in too many respects. The racemes are longer than broad, the pedicels rarely exceed a length of 25 mm. with the perianth usually about 35 mm. long, while the segments are free for only 9—10 mm., and certainly not to the middle.

(b) A species now described *sub nomine* *A. umfoloziensis*, found principally in the valleys of the Black and White Umfolozi Rivers in Zululand. This species has pedicels mostly only 12—15 mm. long, with flowers usually about 33—35 mm. in length, and also differs in too many characteristics to be regarded as belonging to Baker's species.

(c) A species found further inland near Waschbank, Dundee, Vryheid, and what seems to be the same thing, in Swaziland near Mbabane. These plants, which at the Waschbank locality grow socially and cross with *A. saponaria*, do not fit the description and figs. of *A. macracantha* and appear to be distinct, but need further investigation.

During the last 4 years, the writer has made repeated journeys through the Eastern Province, Transkei, Natal, Zululand, Swaziland, etc., with a view to locating plants of *A. macracantha*, but without success. He has examined a considerable number of flowering plants, but could not regard any as fitting the description and figures within reasonable limits. It seems that *A. macracantha* is more likely to be a segregate of *A. saponaria* differing from the usual with racemes more round topped and pedicels shorter than the flowers, and that it is not typical of any species found in reasonable numbers. The writer, therefore, has reached the conclusion that *A. macracantha* should be dropped as being a species unknown in South Africa to-day.

Aloe mudenensis, Reynolds. Species nova in Sectione *Saponiarum*. *Planta* succulenta, caulibus usque ad 80cm. longis. *Folia* circiter 20, dense rosulata, lanceolato-attenuata, patentia, usque ad 25—30 cm. longa, 8—9 cm. lata, supra planiuscula caeruleo-viridia, maculata et lineata, subtus convexa, lineata, obscure maculata vel immaculata, ad margines sinuato-dentata, dentibus 5—7 mm. longis, 10—20 mm. distantibus, rectis vel deflexis. *Inflorescentia* 1—2, usque ad 1 met. alta; scapus medio ramosus, rami 4—8 arcuato-erecti. *Racemi* subcapitati, cylindrici, leviter acuminati, circiter 12 cm. longi, 8—9 cm. lati. *Pedicelli* 20—25 mm. longi. *Bractee* deltoideo-acuminatae, circiter

10 mm. longae, subscariosae, circiter 7 nervatae. *Perigonium* 35 mm. longum, basi subgloboso-inflatum et 9 mm. diam., supra ovarium constrictum (5 mm. diam.) hinc levissime decurvatum et faucem versus ampliatus. *Segmenta exteriora* per 9 mm. libera; interiora latiora obtusiora, marginibus pallidioribus. *Genitalia* usque ad 4 mm. exserta. Ovarium 8 mm. longum, 3 mm. diam.

Hab. Natal, near Mudén, fl. 28th July, 1936, Reynolds 2029! (type) in National Herb. Pretoria and Bolus Herb. Kirstenbosch; Tugela River Valley 3 miles north of Mpogana, fl. 28 July, 1936, Reynolds 2030! in Nat. Herb. Pretoria. Plants 1553—7—36 ex Mudén and 1554—7—36 ex Tugela Valley in garden of Botanical Section, Div. of Plant Industry, Pretoria; No. 1964/34 in National Botanic Gardens, Kirstenbosch. (Plate I).

This attractive species is found in considerable quantities near Mudén, Natal, which seems to be its headquarters. It is also found along the Weenen Road, on the road towards Greytown, in the Mooi River Valley towards Keats Drift, South of Keats Drift towards Greytown, and in the Tugela Valley 2—4 miles North of Mpofana on the Greytown—Dundee main road. It prefers the lower areas of warm valleys, and was not found higher up on the mountain slopes. The species does not sucker freely nor form dense groups, but is usually found in small groups of 3—6 plants, although solitary plants with long stems are also met with. As regards development of stem, specimens occur with stems 2—3 feet long, either erect or decumbent; when decumbent it seems that this is not a normal growth, but the result of plants having been blown over and re-rooted.

In leaf *A. mudenensis* varies considerably; usually the leaves are rather attenuate and of a peculiar bluish-green colour with a characteristic lineation of the lower surface, while in spotting the lower surface varies from lineate and immaculate to obscurely or distinctly spotted. The leaf sap dries reddish-purple.

The peduncle is usually 4—7 branched, while in strong forms as many as 15 racemes are sometimes produced. Racemes also vary in length and density, but in the form most typical of the species they are rounded at the apex, and almost twice as long as broad. The flowers are mostly salmon-orange (R.C.S.),⁵ but forms are found ranging through orange to red.

From an examination of material taken from 24 different plants and the measurements tabulated, it was found that the lowest pedicels varied from 20 mm. to 25 mm. in length, the average being 23 mm., while in

⁵ R.C.S. in all cases refers to colours taken from Ridgway's "Color Standards and Color Nomenclature," Washington, 1912.



FIG. 4.



FIG. 3.



FIG. 2.



FIG. 1.

Plate 1: *Aloe mudensis*, Reynolds.
 Figs. 1 & 2. Plants in natural habitat, fl. 28 July, 1936, about 4 miles south-east of Muden, Natal.
 FIG. 3. Raceme $\times \frac{1}{2}$ approx.
 FIG. 4. Flowers 1/1, from the bud to the post-pollination stage.



FIG. 1.

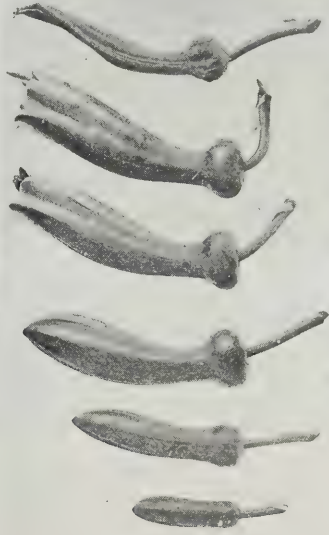


FIG. 2.

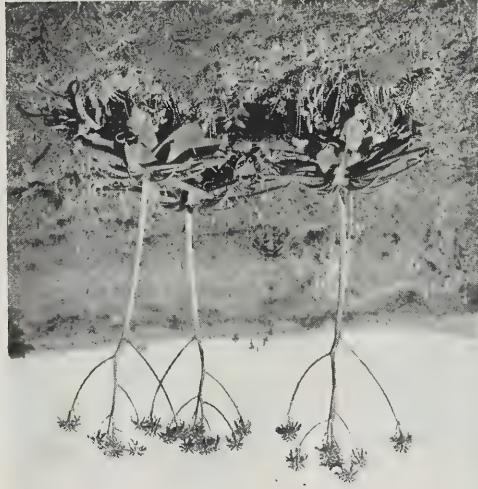


FIG. 3.

Plate II : *Aloe umfolozensis*, Reynolds.

- FIG. 1. Plants in natural habitat, Black Umfolozi Valley, 16 miles south of Nongoma, Zululand, fl. 24 July, 1936
(Reynolds 2011 : type).
FIG. 2. Flowers 1/1, from the bud to the post-pollination stage.
FIG. 3. A more robust form, fl. 24 July, 1936, 4 miles south of Nongoma, Zululand.

the fruit the longest pedicel reached 30 mm. Bracts ranged from 12—15 mm. long, or slightly over half the pedicel length. The shortest perianth was 33 mm. long, the longest 40 mm., with 36 mm. the average; the basal swelling averaged 8 mm. diam., the constriction above the ovary almost invariably 5 mm. diam. with the mouth of the flower wide open.

It has been thought that the Muden plants should be referred to *A. macracantha* Bak. (hereinbefore discussed), but they differ in too many respects to be considered conspecific with it, especially with regard to the shorter pedicels (23 mm. against 25—38 mm.) the shorter flowers (36 mm. against 38—45 mm.), the segments free for only 9 mm., the wide open mouth, and the slightly conical racemes longer than broad. These plants are therefore accorded specific rank, the description being based on personal observations in the localities stated, during July, 1933—36.

Description. Plants solitary or in small groups, with stems up to 80 cm. long, 10 cm. diam., erect or decumbent, old leaves not persistent. *Leaves* about 20, densely rosulate, lanceolate-attenuate, sub-erectly spreading, 25—30 cm. long, 8—9 cm. broad; upper surface flat or slightly canaliculate, bluish-green with numerous irregularly scattered white oblong spots throughout, sometimes lineate; lower surface convex, usually paler than the upper surface, lineate and immaculate or obscurely to distinctly spotted, the oblong dull white spots irregularly scattered or sometimes arranged more or less in undulating interrupted transverse bands; the margins sinuate-dentate, horny, armed with teeth up to 7 mm. long, 10—20 mm. distant, the teeth deltoid pungent brown usually straight, sometimes slightly deflexed. The leaf sap dries reddish-purple. *Inflorescence* a branched panicle up to 1 met. high, sometimes 2 simultaneously. *Peduncle* up to 3 cm. diam. at base, brown, lightly covered with a grey powdery substance, branched about the middle with 4—8 arcuate-erect or sub-erect branches, the lowest branch subtended at base by an ovate-acute thin sub-scarious many nerved bract up to 25 mm. long. *Racemes* sub-capitate, broadly cylindric slightly conical, the apex rounded, about 12 cm. long, 8—9 cm. broad, unicoloured salmon-orange (R.C.S.) the youngest buds erect, older buds horizontally disposed with the lowest open flowers cernuous. *Bracts* deltoid-acuminate, thin sub-scarious white about 7 nerved, usually slightly more than half the length of the pedicel. *Pedicels* 20—25 mm. long, up to 30 mm. in the fruit. *Perianth* salmon-orange, sometimes reddish, 35 mm. long with a sub-globose basal swelling 8 mm. diam., constricted to 5 mm. above the ovary, thence slightly decurved, enlarging towards the throat, the mouth wide open. *Outer segments* free for 9 mm., with paler orange margins and

sub-acute spreading apices. *Inner segments* dorsally adnate to the outer for three-quarters their length, broader than the outer and with more obtuse, more spreading apices, the pale marginal border twice as broad. *Filaments* pale lemon, flattened, the 3 inner narrower and lengthening in advance of the 3 outer. *Anthers* exerted up to 4 mm. *Style* yellower than the filaments, with the stigma at length exerted up to 5 mm. *Ovary* 8 mm. long, 3 mm. diam., finely 6 grooved, green.

Aloe umfoloziensis, Reynolds. Species nova in sectione *Saponariarum*. *Planta* succulenta, breviter caulescens, sobolifera, caespitosa. *Folia* circiter 20, dense rosulata, lanceolato-attenuata, patentia, 20–25 cm. longa, 8–9 cm. lata, supra planiuscula, maculata, subtus convexa, immaculata vel maculata; ad margines sinuato-dentata, dentibus 3–5 mm. longis, 10–15 mm. distantibus, rectis vel deflexis. *Inflorescentiae* 1–2, 1–1½ met. altae; scapus supra medium ramosus, ramis 5–8 arcuato-erectis. *Racemi* capitati, circiter 7–9 cm. longi et lati. *Bractaeae* acuminatae, scariosae, plurinervatae, 8–12 mm. longae. *Pedicelli* 10–15 mm. longi. *Perigonium* 33–38 longum, basi globoso-inflatum (8–9 mm. diam.) supra ovarium constrictum (5–6 mm.), hinc leviter decurvatum et faucem versus ampliatur. *Segmenta exteriora* per 8–9 mm. libera, interiora latiora obtusiora. *Genitalia* usque ad 4 mm. exserta. *Ovarium* 8–9 mm. longum, 4 mm. diam.

Hab. Zululand: 4 miles south of Nongoma, fl. 24 July 1936, Reynolds 2008!; Black Umfolozi River valley, 16 miles south of Nongoma, fl. 24 July 1936, Reynolds 2011! (type); Pongola Valley 11 miles north of Magut, fl. 22 July, 1936, Reynolds 1993!; Transvaal: 1 mile north of Pongola, fl. 22 July, 1936, Reynolds 1992!, all in National Herbarium Pretoria. Plants 1486.7.36 ex Pongola, 1524.7.36 ex Black Umfolozi Valley, and 1483.7.36 ex near Otobotoni in garden of Botanical Section, Div. of Plant Industry, Pretoria. (Plate II.)

While describing the new species *A. umfoloziensis* it is advisable to discuss the peculiar conditions existing in Zululand. The botanist who has travelled during June–July from Natal through Zululand and Swaziland to Komatipoort in the far eastern Transvaal (over 350 miles), must have noticed the gradual transition which occurs in the winter flowering maculate *Aloes*. Broadly and briefly, in Natal *A. saponaria* is found with capitate corymbose racemes 10–15 cm. diam, pedicels and flowers 40–50 mm. long; in Zululand *A. umfoloziensis* is found with smaller round topped racemes 7–9 cm. long and broad, pedicels 12–15 mm., flowers 35–38 mm., while at Komatipoort only *A. pongolensis* occurs with longer cylindric-acuminate racemes 15–20 cm. long, pedicels 10–12 mm. and flowers 33 mm. long. There is a grading

from *A. saponaria* through intermediates to *A. umfoloziensis*, and from *A. umfoloziensis* through intermediates to *A. pongolensis*. In other words, there is a gradual transition from capitate 10—15 cm. diam. racemes in Natal, to cylindric-acuminate 15—20 cm. long racemes at Komatipoort; pedicels gradually decrease from 40—50 mm. long in Natal, to only 10—12 mm. at Komatipoort, and flowers from 40—50 mm. to 33 mm. Again, in Natal one frequently finds only *A. saponaria* growing, while at Komatipoort only *A. pongolensis* is found, but in the intervening valleys of Zululand there is the utmost confusion, due it seems, to the capitate *A. umfoloziensis* and the longer laxer *A. pongolensis* (and possibly another species) growing socially, crossing freely, and producing a bewildering variety in shape, size and colour of racemes.

The confusion is so tremendous, that the botanist must needs witness it himself and exercise great care before describing new species. If some of the plants which seemed distinct were to be described as new, there would be a spate of "new species" and it would be difficult to match the "type" unless a plant were obtained from one particular group. In these circumstances the writer feels it is inadvisable to "split" and that the more prudent course is, within reasonable limits, to "lump" the capitates under *A. umfoloziensis*, those with 10—20 cm. cylindric-acuminate racemes under *A. pongolensis*, and to regard intermediate shapes and sizes of racemes as being the result of hybridisation, or segregation from one or other species.

From an examination of much material gathered from various localities and the measurements tabulated, it was found that *A. umfoloziensis* was more or less fixed within the limits of racemes round topped 7—9 cm. long and broad, pedicels 10—15 mm. and flowers 35—38 mm. This combination of characters constitutes the principal distinguishing features of the species.

A. umfoloziensis is named after the locality which seems to be its headquarters, namely, the valleys of the Black and the White Umfolozi Rivers in northern Zululand. It extends as far south as the Umhlatuzi valley (between Melmoth and Eshowe); it grows with *A. pongolensis* in countless thousands in the Pongola valley north of Magut and 50 miles east in the same valley near Otobotini, also much further north near Abercorn Drift in Amatongaland. Its habitat is principally low-lying sub-tropical parkland for some miles each side of rivers and water-courses, and varies greatly in different localities. Near Pongola some robust forms are found with leaves very decurved and giving the rosette a flattened appearance, this form has stouter peduncles and appears to differ sufficiently to warrant varietal rank, but is held over pending

further investigation. Sometimes solitary plants are found, but usually plants sucker freely and form dense groups often covering many acres. In one locality, such tremendous quantities were flowering as far as the eye could see, that the trees appeared to stand out of a lake of red. When growing in dense groups stems are short, leaves smaller and more spreading, with the inflorescence more slender (typical form); solitary plants or small groups found in exposed positions usually have longer stems, larger leaves and stouter peduncles. Since the species is found mostly in association with *A. pongolensis* (and possibly another species), and since so many intermediates and assumed hybrids occur, it follows that plants can be studied satisfactorily only when flowering wild in the veld.

An affinity to be considered is *A. deflexidens* Pillans,⁶ recorded from "Zululand, exact locality not known." *A. deflexidens* is described *inter alia* with "racemes 7—15 cm. long, about 10 cm. wide, broadly conical dense, pedicels about 2 cm. long, pale red, perianth 4—4.3 cm. long, bright red." The long perianth and red pedicels seem to be unusual characters for Zululand plants, and during a recent trip through Zululand, the writer did not succeed in locating plants with this combination of characters.

Description.—*Plant* succulent, acaulescent or with stem up to 30 cm. long, freely suckering and forming dense groups. *Leaves* about 20, densely rosulate, lanceolate-attenuate, spreading or deflexed, up to 20—25 cm. long with a portion of the apex dried and twisted, 8—9 cm. broad at base; upper surface flat to slightly canaliculate, green to brownish-green, with numerous dull white oblong spots irregularly scattered or sometimes more or less arranged into a series of undulating interrupted transverse bands; lower surface convex, paler green, varying from immaculate to obscurely or distinctly spotted, usually somewhat lineate; the margins sinuate-dentate, armed with pungent deltoid brown teeth 3—5 mm. long, 10—15 mm. distant, straight or deflexed, the horny interspaces rounded. *Inflorescence* a branched panicle 1—1½ met. high, sometimes 2 simultaneously; peduncle flattened low down, 2—3 cm. diam. brown, lightly covered with a greyish powdery substance, branched about the middle or higher with 5—8 arcuate-erect branches, the lowest sometimes with a branchlet and subtended at base by an ovate-acute subscarious many nerved whitish bract up to 30 mm. long, 20 mm. broad at base. *Racemes* subdensely capitate 7—9 cm. long and broad, the apex rounded, unicoloured coral-red, the buds sub-erect, the open flowers cernuous to sub-pendulous. *Bracts* deltoid-acuminate, thin, scarious, white, about 5—7 nerved, shorter than the pedicels. *Pedicels*

⁶ Vide S.A. Gardening, Feb. 1935, p. 36.

10—15 mm. long, reaching 20 mm. in the fruit. *Perianth* usually coral-red, 33—38 mm. long, with subglobose basal swelling 8—9 mm. diam., constricted above the ovary to 5—6 mm., thence slightly decurved and enlarging towards the throat, compressed laterally, the mouth usually wide open. *Outer segments* free for 8—9 mm., nerves not visible, paler at the margins, the apices sub-acute, spreading. *Inner segments* dorsally adnate to the outer for about $\frac{3}{4}$ their length, broader than the outer, with broader marginal pale border and more obtuse more spreading apices. *Filaments* flattened, the 3 inner narrower and lengthening in advance of the 3 outer, pale lemon in colour. *Anthers* the 3 inner and 3 outer in turn exerted 3—5 mm. *Style* slightly yellower than the filaments with the stigma at length exerted 3—5 mm. *Ovary* 8—9 mm. long, 4 mm. diam., finely 6 grooved, green.

Note.—The leaf sap dries purplish.

Aloe pongolensis, Reynolds, (*Fl. Plants of S. Africa*, Vol. XVI, Part 61, Jan. 1936, Plate 603) was described from plants flowering during June—August, 1935, in Johannesburg, and which were originally collected by the author at various localities between the Pongola and Great Usutu Rivers in low lying sub-tropical parkland west of the Lebombo range. During July, 1936, the author had opportunities of making further investigations in the far eastern Transvaal, Swaziland, east of the Lebombo range, and through most of Zululand, and in the light of further knowledge it can now be recorded that *A. pongolensis* has a much wider distribution than was at first thought, and that it is a species as variable as any in the section *Saponariae*. The form most typical of the species is characterised by a short stem, leaves very decurved and giving the rosette a very “flattened out” appearance, with racemes cylindric-acuminate 10—20 cm. long. (Komatipoort, fl. 4 July, 1936, Reynolds 1919!; Pongola, fl. 22 July, 1936, Reynolds 1991!, both in Nat. Herb. Pretoria.) The perianth of the type (Reynolds 1101 in Nat. Herb.) is described and figured with the mouth very wide open, and although such flowers are found at Pongola, the form which seems to be the most frequent is that now figured herein, Plate III, fig. 4.

At Komatipoort, the only winter flowering maculate *Aloe* found is *A. pongolensis*, but as the species extends southwards, it meets and crosses freely with the capitate *A. umfoloziensis*, and possibly another species, producing the tremendous confusion already referred to. Reference has also been made to the capitate species with long pedicels and flowers in Natal grading into the Zululand *A. umfoloziensis* with shorter flowers and pedicels, and it can be stated that a similar gradual

transition occurs with *A. pongolensis*. At Komatipoort *A. pongolensis* has racemes up to 20 cm. long, with pedicels mostly 10–12 mm. long and flowers averaging 33 mm. in length. Southwards through Swaziland into Zululand there is a gradual change to longer racemes pedicels and flowers, until in the White Umfolozi valley (12 miles south of Mahlabatini) plants are found which differ sufficiently to warrant at least the varietal rank now proposed.

***Aloe pongolensis*, Reynolds, var. *zuluensis*, Reynolds.** Varietas nova, a forma typico caulibus longioribus, foliis minus decurvatis, racemis pedicellis et floribus longioribusque differt.

Hab.—Zululand : White Umfolozi valley, fl. 24 July, 1936, Reynolds 2017! (type) ; Black Umfolozi valley; 16 miles south of Nongoma, fl. 24 July, 1936, Reynolds 2012! ; 7 miles south of Nongoma, fl. 24 July, 1936, Reynolds 2010! all in Nat. Herb. Pretoria. Plants 1525.7.36 (ex Black Umfolozi valley) and 1528.7.36 (ex White Umfolozi valley) in garden of Botanical section, Div. of Plant Industry, Pretoria. (Plate IV.)

The var. *zuluensis* differs from typical *A. pongolensis* with stems reaching 30–40 cm. long ; solitary plants and small groups occur, dense groups from suckers were not noticed. The leaves are more obliquely spreading and not so decurved, while the rosettes have not the “ flattened out ” appearance so typical of *A. pongolensis*. The racemes are longer (25–30 cm.) with pedicels 12–15 mm. long, and flowers averaging 37–40 mm. in length. The variety is often found growing socially with *A. umfoloziensis* and crosses and intermediates are frequent ; it therefore follows that plants should be collected only while flowering, when specimens typical of the variety can be selected. For purposes of comparison, photographs of flowering plants taken at Komatipoort, Pongola, and the White Umfolozi valley are reproduced herein.

Description.—Plants solitary or in small groups, with stems 30–40 cm. long. *Leaves* about 16–20, densely rosulate, lanceolate-attenuate, spreading, up to 30 cm. long, 8–9 cm. broad at base, with a portion of the apex dried and twisted ; upper surface flat to slightly concave, brownish-green with numerous oblong whitish spots irregularly scattered or arranged more or less into a series of undulating transverse bands ; lower surface convex, sometimes immaculate, usually with obscure to distinct spots arranged in transverse bands, and usually paler than the upper surface ; margins sinuate-dentate, armed with deltoid brown pungent teeth 5–6 mm. long, 10–15 mm. distant, straight or deflexed, the interspaces rounded. *Inflorescence* 1–2, up to 1–1.5 met. high, branched about the middle or higher with 5–8 branches, the lowest

FIG. 1.



FIG. 2.

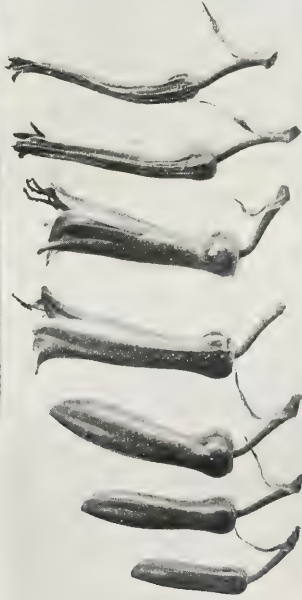


FIG. 3.



FIG. 4.



- Plate III : *Aloe pongolensis*, Reynolds.
- FIG. 1. Plants fl. 21 July, 1936, in the Pongola Valley, S.-East Transvaal (type locality), about 12 miles north of Magut, Zululand.
- FIG. 2. Flowers 1/1, from a plant at Pongola, S.-East Transvaal.
- FIG. 3. Plants fl. 4 July, 1936, at Komatipoort, Eastern Transvaal.
- FIG. 4. Flowers 1/1, from a plant at Komatipoort.



FIG. 2.



FIG. 1.

Plate IV: *Aloe pongplensis*, Reynolds, var. *zuluensis*, Reynolds.

FIG. 1. Plants fl. 24 July, 1936, in the valley of the White Umfolozi River, 12 miles south of Mhlabatini, Zululand.

FIG. 2. Plants fl. 24 July, 1936, 7 miles south of Nongoma, Zululand.

sometimes with a branchlet and subtended at base by attenuate sub-scarious thin white many nerved bracts up to 3—4 cm. long. *Racemes* cylindric and slightly acuminate, the terminal 25—30 cm. long, 8 cm. broad, about 50 flowered, the buds sub-erect, not densely congested, the open flowers 10—15 mm. distant. *Bracts* thin scarious white many nerved, as long as the pedicels or slightly shorter. *Pedicels* 12—15 mm. long. *Perianth* coral-red, 37—40 mm. long, subglobose inflated at base (10 mm. diam.), constricted above the ovary to 6 mm., thence slightly decurved and enlarging towards the throat, and with wide open triangular mouth. *Outer segments* free for 10 mm. the margins paler, the apices sub-acute, spreading. *Inner segments* dorsally adnate to the outer for about 30 mm., broader than the outer and with broader pale marginal border, the apices more obtuse more spreading. *Filaments* flattened, the 3 inner narrower and lengthening in advance of the 3 outer. *Anthers* exerted 2—3 mm. *Stigma* at length exerted 2—3 mm. *Ovary* 9—10 mm. long, 3—3.5 mm. diam. finely 6 grooved green.

Note.—The leaf sap dries purplish.

Aloe Keithii, Reynolds. Species nova in sectione *Saponariarum*, *A. zebrinae* Bak et *A. pongolensi* Reynolds affinis. Planta succulenta, caulibus usque ad 30 cm. longis. *Folia* circiter 20, dense rosulata, lanceolato-attenuata patentia, usque ad 60—70 cm. longa, 9—11 cm. lata; supra subcanaliculata, viridia, maculis oblongis albidis numerosis transverse irregulariter fasciatim picta; subtus convexa, immaculata vel interdum obscure maculata; ad margines sinuato-dentata, dentibus corneis pungentibus brunneis leviter deflexis 6—8 mm. longis, 10—20 mm. inter se distantibus armata. *Inflorescentia* usque ad 1.75 met. alta; scapus medio 5—8 ramosus. *Racemi* cylindrico-acuminati, 20—25 cm. longi, 7—9 cm. lati. *Bractee* deltoideo-acuminatae, subscariosae 5—7 nervatae, 15—20 mm. longae. *Pedicelli* circiter 15 mm. longi. *Perigonium* rubrum, 36 mm. longum, basi valde inflatum et 11—12 mm. diam., supra ovarium constrictum (6 mm.) hinc leviter decurvatum et faucem versus ampliatum. *Segmenta exteriora* per 12 mm. libera, subacuta, marginibus pallidioribus; interiora latiora obtusiora. *Genitalia* 2—4 mm. exserta. *Ovarium* 10 mm. longum, 3½ mm. diam.

Hab. Eastern Swaziland: along the top of the Lebombo range, 26 miles south of Stegi, fl. 21 July, 1936, Reynolds 1983! (type) in National Herb. Pretoria. Plants 1467.7.36 in garden of Botanical Section, Div. of Plant Industry, Pretoria, and 1714.36 in National Botanic Gardens, Kirstenbosch. (Plate V.)

This new *Aloe* was first brought to the Author's notice by Capt. D. R. Keith who has many specimens in cultivation in his garden 6 miles south of Stegi. Capt. Keith records that he has not found this species on the Portuguese side of the hills, and that it appears to be confined to deep rich soil on the western part of the Lebombo range, between Stegi and Usutu Poort (Abercorn Drift). During July, 1936, the Author had an opportunity of visiting the Lebombo range, and he found the species growing 17 miles and 26 miles south of Stegi, while further south, some robust plants were found at a point about 7 miles north of the Great Usutu river. The description is drawn up from personal observations at these localities.

In shape and size of flowers, *A. Keithii* seems near *A. zebrina* Bak.⁷ but differs from the S.W. African plants with much longer leaves, purplish sap, denser shorter racemes and the flowering period. The very large basal swelling of the perianth (11—12 mm.) suggests an affinity with *A. barbertoniae* Pole Evans⁸ but *A. barbertoniae* has comparatively narrower flowers and laxer longer racemes.

It has been suggested, that due to its growing along the top of the mountain in the mist belt, *A. Keithii* is merely a robust form of *A. pongolensis* which occurs in the drier valleys below in such tremendous quantities, but there are too many points of difference for them to be conspecific.

A. Keithii is found solitary or in small groups, with a stem reaching 30 cm. in length, with the leaves suberectly spreading, while *A. pongolensis* has little or no stem, suckers freely and forms dense groups while the leaves are decurved giving the rosettes a low "flattened out" appearance. The flowers of *A. Keithii* are also very different from those of *A. pongolensis* being larger and broader, and with a considerably larger basal swelling as is well illustrated in the accompanying figures.

In some respects *A. Keithii* resembles *A. pongolensis* var. *zuluensis*, but the latter is a smaller plant with smaller leaves and narrower flowers.

Description. Plants with stems up to 30 cm. long, solitary or in small groups. Leaves about 20, densely rosulate, lanceolate-attenuate, erectly spreading, up to 60 cm. long, 9—11 cm. broad at base; upper surface slightly canaliculate, green, slightly brownish towards apex, somewhat indistinctly lineate, with numerous distinct or obscure elongated whitish spots, the spots scattered or irregularly arranged in a series of interrupted undulating transverse bands; lower surface convex, paler green, mostly

⁷ Vide Engler: Das Pflanzenreich, Liliac.-Asphod.-Alcin., p. 207.

⁸ Vide Trans. Roy. Soc. S.Af., vol. V, part 6, plate LII.



Fig. 1.

Plate V: *Aloe Keilii*, Reynolds.

Fig. 2.

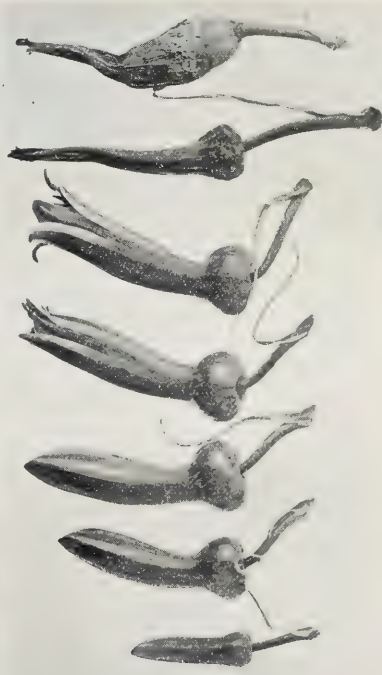


Fig. 3.



Fig. 1. Plants fl. 21 July, 1936, along the top of the Lebombo range, 26 miles south of Steg, Eastern Swaziland.
 Fig. 2. Flowers 1/1, with bracts longer than usual, taken from a plant illustrated in fig. 1.
 Fig. 3. Flowers 1/1 taken from different plants, illustrating variation in shape and size.

immaculate, sometimes with obscure immersed spots more or less in irregular bands; margins sinuate-dentate, armed with deltoid pungent brownish teeth 6—8 mm. long, 15—25 mm. distant, straight or a little deflexed, the interspaces rounded. *Inflorescence* 1—2, up to 1.75 met. high; the peduncle flattened low down and up to 4 cm. diam., lightly covered with a greyish powdery substance, branched about the middle or higher with 5—8 branches, the 1—2 lowest sometimes with 1—2 branchlets. *Racemes* cylindric-acuminate, about 20—25 cm. long, 7—9 cm. broad, with the buds slightly congested, greenish tipped and not striped, gradually slightly laxer downwards with the open flowers 15—25 mm. distant. *Bracts* deltoid-acuminate, thin, rather scarious, about 5—7 nerved about as long as the pedicels or slightly longer. *Pedicels* 12—15 mm. long, reaching 20 mm. long in the fruit. *Perianth* coral-red, 36 mm. long, with a conspicuous basal swelling 11—12 mm. diam., severely constricted above the ovary to 6 mm. diam., thence slightly decurved and enlarging towards the throat, the mouth usually wide open. *Outer segments* free for 12 mm., with paler edges and subacute spreading apices. *Inner segments* dorsally adnate to the outer for about 20 mm., broader than the outer, and with the pale marginal border twice as broad, the apices more obtuse and more spreading. *Filaments* flattened, the 3 inner narrower and lengthening in advance of the 3 outer. *Antlers* the inner and outer in turn exerted 2—4 mm. *Stigma* at length exerted 2—4 mm. *Ovary* 10 mm. long, $3\frac{1}{2}$ mm. diam. at base, slightly tapering into the style, finely 6 grooved, green.

